ELSEVIER

Volume 65, Numbers 1–2, March–April 1997

JOURNAL OF POWER SOURCES

Contents

Foreword xi

The Frank M. Booth Award xiii

The Bourner Lecture: Electrochemical power sources – an important contributor to modern health care xv
C.F. Holmes (Clarence, NY, USA)

(1) Nickel/metal hydride technology for consumer and electric vehicle batteries — a review and up-date 1
S.K. Dhar, S.R. Ovshinsky, P.R. Gifford, D.A. Corrigan, M.A. Fetcenko, S. Venkatesan (Troy, MI, USA)

(2) Performance evaluation of $LaNi_{4.7}Al_{0.3}$ and $LaNi_5$ electrodes used as anodes in nickel/metal hydride secondary batteries by analysis of current transients 9
S.-I. Pyun, J.-N. Han, T.-H. Yang (Daejon, South Korea)

(3) Performance and characterization of metal hydride electrodes in nickel/metal hydride batteries 15
Y. Yang, J. Li, J.M. Nan, Z.G. Lin (Xiamen, People's Republic of China)

(4) Advanced nickel/hydrogen dependent pressure vessel (DPV) cell and battery concepts 23
D.B. Caldwell, C.L. Fox, L.E. Miller (Joplin, MO, USA)

(5) Cellulosic separator applications: new and improved separators for alkaline rechargeable cells 29
H. Lewis (Crane, IN, USA), C. Grun, A. Salkind (Piscataway, NJ, USA)

(6) Improved silver/zinc secondary cells for underwater applications 39
J. Skelton, R. Serenyi (Pawcatuck, CT, USA)

(7) New developments in very high rate silver oxide electrodes 47
D.F. Smith, G.R. Graybill, R.K. Grubbs (Boulder Creek, CA, USA), J.A. Gucinski (Crane, IN, USA)

(8) Diagnostic analyses for mechanisms of self-discharge of electrochemical capacitors and batteries 53
B.E. Conway, W.G. Pell, T.-C. Liu (Ottawa, Ont., Canada)

(9) Effects of three-dimensional current collectors on supercapacitors' characteristics 61
N. Tassin, G. Bronoel (Fontenay-sous-bois, France), J.-F. Fauvarque, I. Bispo-Fonseca (Paris, France)

(10) Negative corrosion of lead–antimony alloys in lead–acid batteries at high temperatures 65
T. Omae, S. Osumi, K. Takahashi, M. Tsubota (Kyoto, Japan)

(11) Development of an electrode for lead–acid batteries possessing a high electrochemical utilization factor and invariable cycling characteristics 71
L.A. Yolshina, V.Ya. Kudyakov, V.G. Zyryanov (Ekaterinburg, Russia)

(12) Rechargeable zinc–carbon hybrid cells 77
K.V. Kordesch (Graz, Austria), C. Fabjan (Vienna, Austria), J. Daniel-Ivad (Richmond Hill, Ont., Canada), J. Oliveira (Nepean, Ont., Canada)

(13) Electrochemical performance of gelled zinc alloy powders in alkaline solutions 81
J.-Y. Huot, E. Boubour (Pointe-Claire, Que., Canada)

(14) Rechargeable alkaline manganese dioxide cells. A test report 87
M.D. Farrington (Kanata, Ont., Canada)

(15) Reliability of lithium batteries in search and rescue beacons 93
T.J. Patraboy, M.D. Farrington (Kanata, Ont., Canada), G.J. Donaldson (Ottawa, Ont., Canada)

(16) A systems approach to creating reliable batteries for implantable medical applications 101
W.D.K. Clark, K.C. Syracuse, M. Visbisky (Clarence, NY, USA)

Elsevier Science S.A.

(17) An improved nickel/zinc battery for ventricular assist systems 109
D. Coates, E. Ferreira, A. Charkey (Danbury, CT, USA)

(18) Discharge and safety characteristics of improved low magnetic signature lithium cells 117
P.W. Krehl, M.F. Pyszczek (Clarence, NY, USA)

(19) Development of an equivalent-circuit model for the lithium/iodine battery 121
C.L. Schmidt, P.M. Skarstad (Minneapolis, MN, USA)

(20) High-rate lithium/manganese dioxide batteries; the double cell concept 129
J. Drews, R. Wolf, G. Fehrmann, R. Staub (Pirna, Germany)

(21) Bipolar lithium-ion battery development 133
R.A. Marsh (Wright Patterson AFB, OH, USA), P.G. Russell, T.B. Reddy (Pawcatuck, CT, USA)

(22) Characteristics of a thin film lithium-ion battery using plasticized solid polymer electrolyte 143
Y. Aihara, M. Kodama, K. Nakahara, H. Okise, K. Murata (Osaka, Japan)

(23) 50 to 100 Ah lithium-ion cells for aircraft and spacecraft applications 149
G. Bruce, P. Mardikian, L. Marcoux (North Vancouver, BC, Canada)

(24) Portable fuel cell power generator 155
H. Voss, J. Huff (Burnaby, BC, Canada)

(25) Performance and modelling of a direct methanol solid polymer electrolyte fuel cell 159
K. Scott, W. Taama (Newcastle upon Tyne, UK), J. Cruickshank (Gosport, Hants, UK)

(26) Dynamic interaction of a proton exchange membrane fuel cell and a lead–acid battery 173
J.C. Amphlett, E.H. De Oliveira, R.F. Mann, P.R. Roberge, A. Rodrigues, J.P. Salvador (Kingston, Ont., Canada)

(27) Solid polymer fuel cells for pulse power delivery 179
J.B. Lakeman, G.O. Mepsted (Gosport, Hants, UK), P.L. Adcock, P.J. Mitchell, J.M. Moore (Loughborough, Leics., UK)

(28) An investigation of hydrogen storage methods for fuel cell operation with man-portable equipment 187
D. Browning, P. Jones, K. Packer (Gosport, Hants, UK)

(29) Characterization of different grades of aluminum anodes for aluminum/air batteries 197
M.L. Doche (Saint Martin d'Hères, France), F. Novel-Cattin (Rueil-Malmaison, France), R. Durand, J.J. Rameau (Saint Martin d'Hères, France)

(30) Enhanced electrochemical performance in the development of the aluminum/hydrogen peroxide semi-fuel cell 207
E.G. Dow (Newport, RI, USA), R.R. Bessette (N. Dartmouth, MA, USA), G.L. Seeback (Lexington, KY, USA), C. Marsh-Orndorff (Salt Lake City, UT, USA), H. Meunier (Worcester, MA, USA), J. VanZee (Columbia, SC, USA), M.G. Medeiros (Middletown, RI, USA)

(31) A safe, fast-charge, two-volt lithium/polymer cathode 'AA'-size cell with a greater than 250 Wh kg^{-1} energy density 213
J. Broadhead, T. Skotheim (Tucson, AZ, USA)

(32) Lithium rechargeable envelope cells 219
A. Gilmour (Henley on Thames, Oxon, UK), C.O. Giwa, J.C. Lee, A.G. Ritchie (Gosport, Hants, UK)

(33) Lithium intercalation in low temperature Li–Mn–O compounds: a new monoclinic phase and structural in situ studies 225
F. Le Cras, P. Strobel, M. Anne, D. Bloch (Grenoble, France)

(34) Investigations of lithium manganese oxide materials for lithium-ion batteries 227
Y. Yang, D. Shu, H. Yu (Xiamen, People's Republic of China), X. Xia (Urumuqi, People's Republic of China), Z.G. Lin (Xiamen, People's Republic of China)

(35) Nickel hydroxide and other nanophase cathode materials for rechargeable batteries 231
D.E. Reisner (North Haven, CT, USA), A.J. Salkind (Piscataway, NJ, USA), P.R. Strutt, T. Danny Xiao (North Haven, CT, USA)

(36) Ceramic superconducting materials as intercalation cathodes in secondary non-aqueous lithium batteries 235
W. Paul Hagan, S.L. Vickers, C. Capiglia (Leicester, UK)

(37) A novel rechargeable lithium composite cathode system 241
A. Gilmour (Henley on Thames, Oxon, UK)

(38) Electrolytes and additives for high efficiency lithium cycling 247
E. Eweka, J.R. Owen (Southampton, UK), A. Ritchie (Gosport, Hants, UK)

(39) Sea-water battery for subsea control systems 253
Ø. Hasvold, H. Henriksen, E. Melvær (Kjeller, Norway), G. Citi (Milan, Italy), B.Ø. Johansen, T. Kjønigsen (Horten, Norway), R. Galetti (Venice, Italy)

(40) High-g power sources for the US Army's HSTSS programme 263
L.W. Burke, Jr., E.S. Irwin (Aberdeen Proving Ground, MD, USA), R. Faulstich (Yuma Proving Grounds, AZ, USA), C.E. Newnham, N. Scholey (Abingdon, Oxon., UK)

(41) High energy battery safety: anecdotes, issues and approaches 271
J.A. Banner, C.S. Winchester (Silver Spring, MD, USA)

Poster Abstracts 275

Author Index of Volume 65 289

Subject Index of Volume 65 291

The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. A leaflet describing our requirements is available from the publisher upon request.